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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,588	08/26/2003	Alexandre Kral	1875.1210004	2403
26111	7590	09/16/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			PHAM, TUAN	
			ART UNIT	PAPER NUMBER
			2643	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/647,588

Applicant(s)

KRAL, ALEXANDRE

Examiner

TUAN A. PHAM

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-11 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
REXFORD BARNIE  
PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/4/04, 5/10/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 03/04/2004 and 05/10/2005 has been considered by Examiner and made of record in the application file.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**4. Claims 1-3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya (U.S. Patent No.: 6,512,801) in view of Straub et al. (Pub. No.: U.S 2002/0039052, hereinafter, "Straub").**

**Regarding claim 1**, Ninomiya teaches a local oscillator generation circuit, comprising (see figure 1:  
a substrate (see figure 1, integrated circuit, col.5, ln.45-55); and  
a plurality of voltage controlled oscillators (VCOs) disposed on said substrate (see figure 1, VCO 1-VCO 3, col.5, ln.45-55), each of said VCOs configured to generate a local oscillator (LO) signal over a different frequency band (see figure 1, mixer 8, col.6, ln.12-50); wherein one of said VCOs is selected to provide an output LO signal based on a desired frequency for said output LO signal (see col.7, ln.9-38).

It should be noticed that Ninomiya fails to teach differential local oscillator signal. However, Straub teaches such feature (see figure 2, mixer 265, differential signal, col.5, [0041]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Straub into view of Ninomiya in order to increase the amount of data that can be transmitted as suggested by Straub at column 1, [0007].

**Regarding claim 2**, Straub further teaches the local oscillator generation circuit wherein said LO generation circuit further comprises a plurality of polyphase circuits that

correspond to said of VCOs, each polyphase circuit configured to generate said output LO signal with in-phase (I) and quadrature (Q) components (see figure 2, LPF 269, 271, mixer 265, 267), and Ninomiya further teaches plurality of VCO (see figure 1, VCO 1-VCO 3).

**Regarding claim 3**, Ninomiya further teaches the local oscillator generation circuit wherein one of said plurality of VCOs and one of said polyphase circuits are selected based on said desired frequency for said output LO signal (see figure 1, VCO 1, LPF 25, col.7, ln.9-38).

**Regarding claim 5**, Straub further teaches the local oscillator generation circuit further comprising a LO correction circuit that is configured to adjust an amplitude level of said output LO signal (see figure 2, variable amplifier 273, [0038]).

**5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Straub et al. (Pub. No.: U.S 2002/0039052, hereinafter, "Straub") in view of Ninomiya (U.S. Patent No.: 6,512,801).**

**Regarding claim 12**, Straub teaches a method for generating a local oscillator signal for a receiver (see figure 2), comprising:

generating a plurality of local oscillator signals (see figure 2, quadrature oscillator 227, [0030]);

outputting said plurality of local oscillator signals to a plurality of corresponding amplifiers (see figure 2, quadrature oscillator 227, amplifier 236, 238, [0035]).

It should be noticed that Straub fails to teach enabling one of said amplifier to select one of said local oscillator signals for tuning said receiver, and disabling the other amplifiers; and tuning a frequency of said selected local oscillator signal. However, Ninomiya teaches such feature (see figure 1, buffer amplifier 5 is included plurality amplifier, when VCO 1 is selected, the amplifier associated with VCO1 is also selected for providing a different frequency band, and disabling other amplifiers is connected with VCO 2-VCO 3, col.7, ln.5-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ninomiya into view of Straub in order to increase the amount of data that can be transmitted as suggested by Straub at column 1, [0007].

**Regarding claim 13**, Straub further teaches the method further comprising the step of generating a quadrature local oscillator signal from the selected local oscillator signal (see figure 2, quadrature oscillator 227).

**Regarding claim 14**, Ninomiya further teaches the method further comprising wherein each the plurality of local oscillator signals cover a different frequency band, and said step of enabling is based on a predetermined frequency band of operation for said receiver (see col.7, ln.5-37).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya (U.S. Patent No.: 6,512,801) in view of Straub et al. (Pub. No.: U.S. 2002/0039052, hereinafter, "Straub") as applied to claim 1 above, and further in view of Nakamura (U.S. Patent No.: 5,303,258).

Regarding claim 6, Ninomiya and Straub, in combination, fails to teach a variable amplifier that variably amplifies said output LO signal according to a control signal; and a level detect circuit, connected to the output of said variable amplifier, that generates said control signal based on an output level of said variable amplifier. However, Nakamura teaches such features (see figure 2b, amplifier 53, detector 54, col.5, ln.52-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nakamura into view of Ninomiya and Straub in order to increase the amount of data that can be transmitted as suggested by Straub at column 1, [0007].

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya (U.S. Patent No.: 6,512,801) in view of Straub et al. (Pub. No.: U.S. 2002/0039052, hereinafter, "Straub") as applied to claim 1 above, and in view of Nakamura (U.S. Patent No.: 5,303,258) and further in view of Otaka et al. (U.S. Patent No.: 6,563,383, hereinafter, "Otaka").

Regarding claim 6, Ninomiya, Straub, and Nakamura, in combination, fails to teach said variable amplifier includes a field effect transistor (FET) configured so that

said control signal controls a current of said FET, and thereby a gain of said variable amplifier. However, Otaka teaches such features (see col.17, ln.35-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Otaka into view of Ninomiya, Straub, and Nakamura in order to increase the amount of data that can be transmitted as suggested by Straub at column 1, [0007].

### ***Allowable Subject Matter***

8. Claims 8-11 are allowed.

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Conclusion**

**10.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Razavi et al. (U.S. Patent No. 6,807,406), Tanji et al. (U.S. Patent No. 6,583,661), Fransis (U.S. Patent No. 6,564,045), and Prentice (Pub. No.: U.S.2002/0042255) are not applied into

this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

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Art Unit 2643  
September 02, 2005  
Examiner

Tuan Pham

  
**REXFORD BARNIE**  
**PRIMARY EXAMINER**